

FIGURE 1

Characteristics of the arp protein

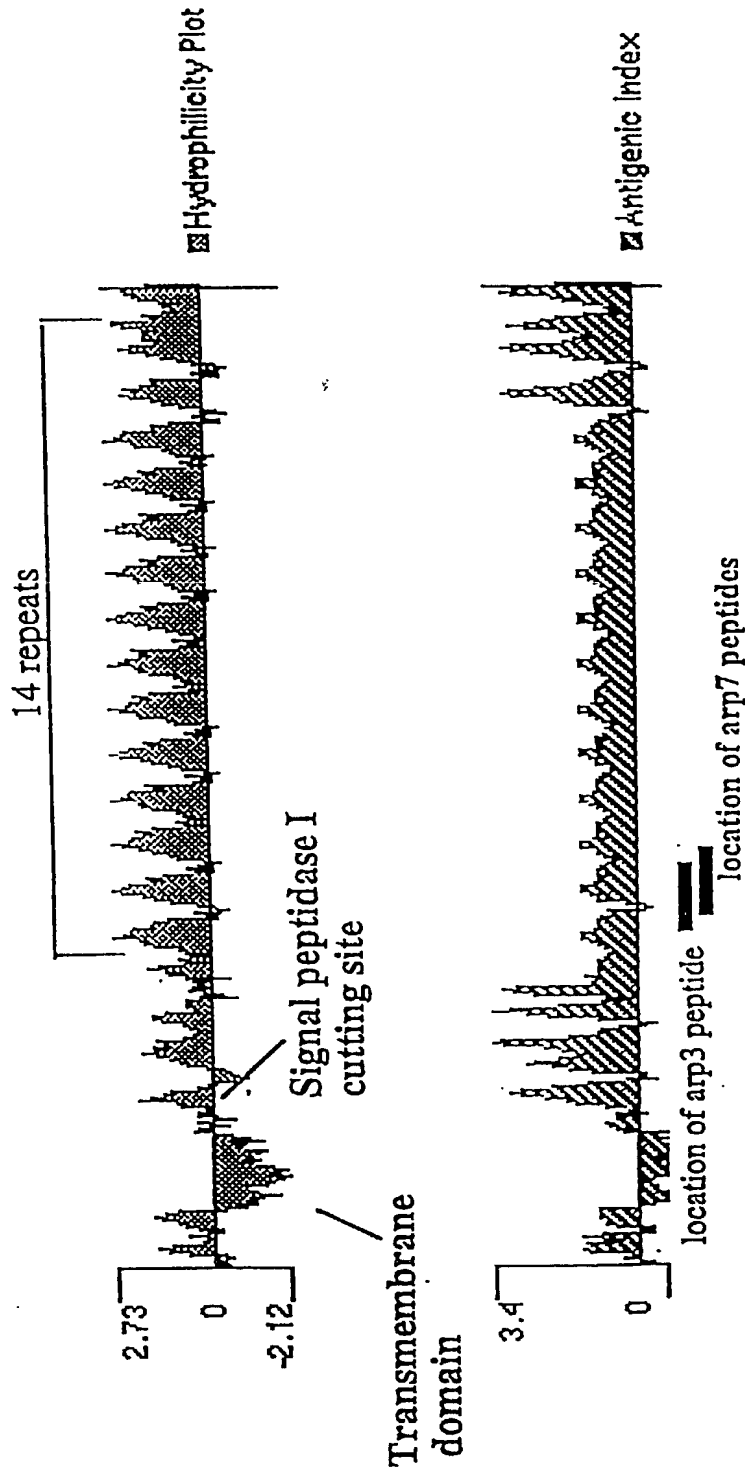


FIGURE 2

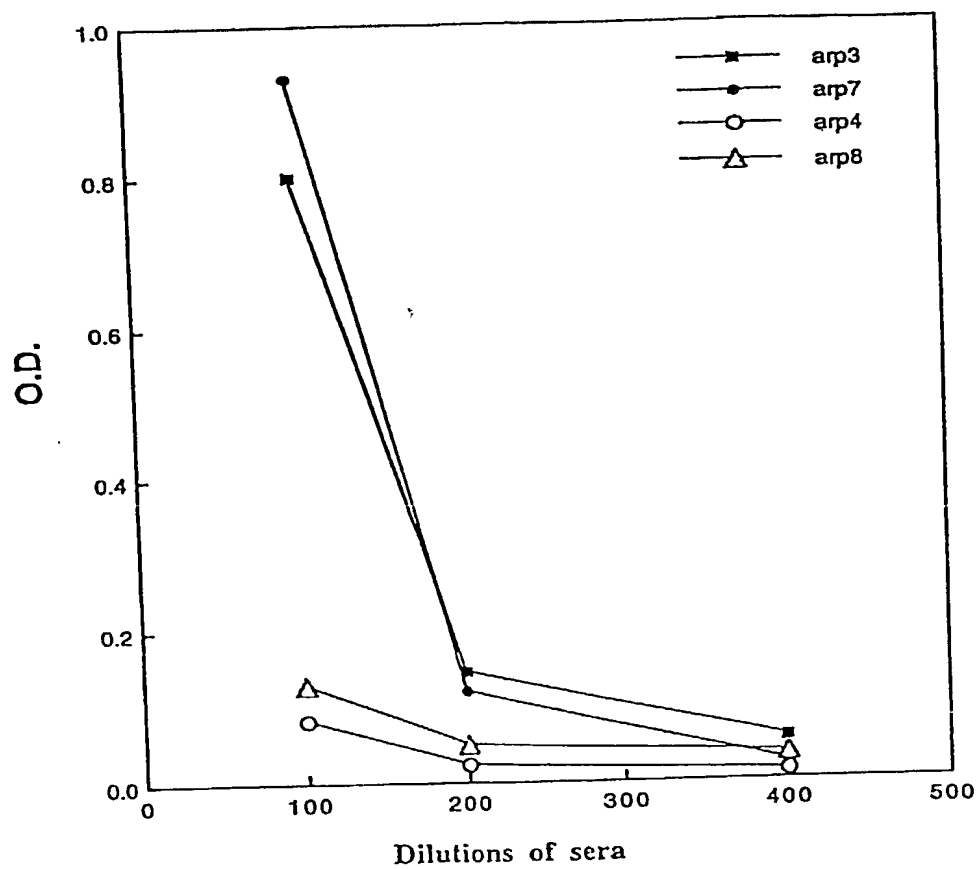


FIGURE 3

**Detection of anti-arp antibody
in human serum using peptide arp#3**

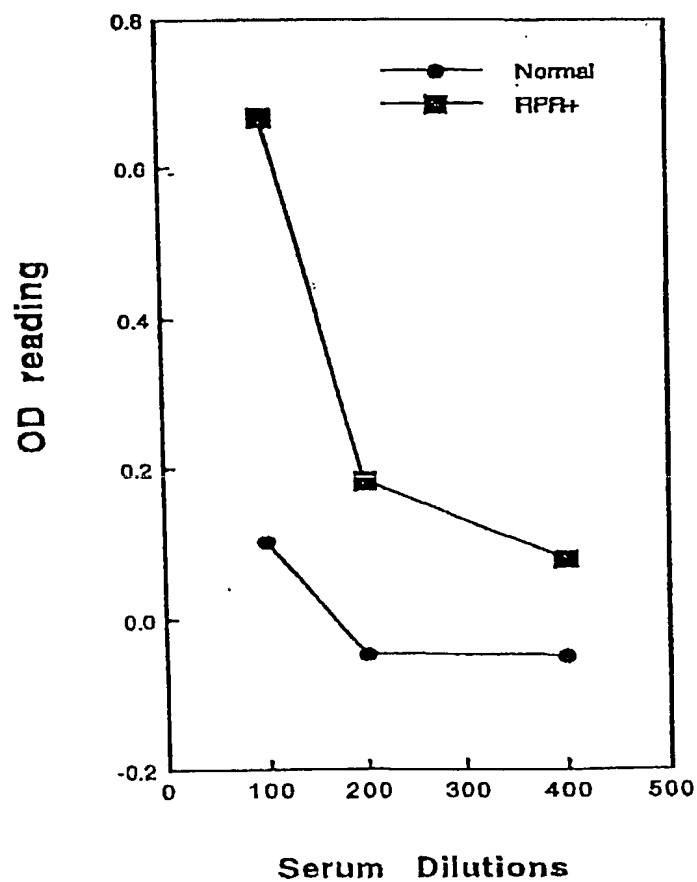


FIGURE 4

GTGATGACAC AGCTGACGCT CTCAGGTCTT GCACATATTG OGGGCTGGT GCGACATCT
CTCCTGCCAC CTGCTACAGT GTCAGGTTCA TCGGGGAATT GAGGAACTG TTATCCGCGC
TCCCATCTT CCGATACTGG ATCGGTGTGC GGGGGAGTAG GAGTGGGGAA GGGTCTGTGC
TGATATCGCG TGGTAGTGCG CGCGTTCTGG TACCTCAGTG CGAAGGGAGT CAGTATCGCT
TACGTGCCCG TTCATCGCAG TGGGGGCTCT CAAGATTCGA CGATGAGCAC AGCAGTGGGC
GATAOGCTCC TTAACGCCCTT CTTGACGAG GGAATGGTGG TTACGGCAGT ACGGCGGGT
GTACACGACG GCCAGACTAT AGCAGAAATT GCTGCATGTT TTGAAGTAAT GCCCGATTAC
GGTTGTTGG TGCAGTTTCA TTCCGCTCGT CTCCTGTGGT GGGAAAGCCC TACCTCCCGT
GCGCGGGGG CTTGGTCTTC AGAGAGGTTT CGTGCTGTG TGACATTAGT GGATTTGCAT
ACGACGCGCG CGTGTGTCTA TCGCTGTGTC GCGCCATACA GGGAGAGTAT TCCCGTTTCT
GAGTGTGTTG ACGTCGTTAC CCGTTGTATT GCGGAGCAGG CAATTTCTGA CATACGGGTG
GGCAGGAGCA CCGATACAGC CGGAGTTCAG TTATAGAAAA TAGGGAATAC GTAAGGTGTC
TGCAGCGTCG CTTGAGCTGG GAGGAGTCTT ATGATTAAAC GCCACATGTT CGCAAAAAGG
GGTGTCAAAG GAAGATCTTA CCTGGTTAGG GTGAACACTG CGTTCCTAGT GCTTTGTGTT
GCTTCTGTCA CCGCGCTTGG GGCTGTGTGG GAAGGGAATG CAGAAATTGG CCGCAGGGA
AGTTTTCTGC AGGAACGGC

[illegible]

GG GGGAACTCCC CTTTACGCTC CCGACCTAT CCGAGTCAGA AATTGTGGTT CCGGAGGAAC
AGAAAGGACG TGCGCATCCC CAGGTGATAC CCGAGGGTGC GCCACGTGGA CTGCAACCTG
GTGAATACTA CGTACAGATT GCAGTCTTTC ATGACGCTAT CCAGGTGCAG AGCATTGTCC
ACCGTTACGG GGTAGAATAC CCCATCGCAG TGGAGCAGGA CATCCATGAA GGTAAGGGTGC
GTTTCACCGT ATGCGTCGGT CCTGTCCAAA AAGACGAACG CGGCGGGTA CTAGAGAACT
TCCAAAGGTT TGGATTCAAG GACGCCTTTC TGA AAAAAGGC GCGATGATCA GTGCGGCCCT
CCTCTTCCCC TCGTGACCGT GGTGACTGCG CCGGAAGGGG GCGCACAGAG CCGGAAGGAA
CGGAAGGGAA GGGGCAGACT TAACTATTTT TTTGTTTTT TGAGCACGTA AAACGGCGCC
ATCTCCTTTG AAGGCTTTTC TGCGCGGGGA GCGCCCATGT AGCGAACGGA GTTACTGTCT
ATCAGCTCGT ACAGCTCTTT CTGCTGGGGT GCCTTCGATT GCTCCGAGGA CACAAGCGAG
AGTTCGACAA TTGCTCTTC ACGTACCATC CAGTACCGC GATACGTAAG AGGAGAAGGT
GCCGACTTCT TCTCAAGGGC AAGCTCTACC TTTTGCGCAG TGCCATCCGC GTTGAACGTC ACAGTC

FIGURE 5

T. pallidum ssp. Pallidum (Ni)-arp protein sequence

MFVRS DMFPK NTAVEISNLE KNAKAQAVVI GHAGIPGLLV SLAPAAAQQL
GIGVYQAVRV RVRTLTGTVRG GSQTSQDGLS LASLPSRVPA RPAQRDPLSS
PPAGHTVPEY RDTVIFDDPR LVSPLSR
Type I: 1, 2, 4, 7, 8
Type II: 3, 5, 9, 10, 11, 12
Type III: 13, 14
Type IV: 6

EVE DAPKVVEPAS EREGGER
EVE DAPKVV~~EPAS~~ EREGGER
EVE DVPKVVEPAS EREGGER
EVE DAPKVV~~EPAS~~ EREGGER
EVE DVPKVVEPAS EREGGER
EVE NVPKVVEPAS EREGGER
EVE DAPKVV~~EPAS~~ EREGGER
EVE DAPKVV~~EPAS~~ EREGGER
EVE DVPKVVEPAS EREGGER
EVE DVPKVVEPAS EREGGER
EVE DVPKVVEPAS EREGGER
EVE DVPKVVEPAS EREGGER
EVE DVPKVVEPAS EREGGER
EVE DVPKVVEPAS GHEGGER
EVE DVPKVV~~EPAS~~ GHEGGER

EVA SQHTKQPSHS VSNSAPNQFR KP

FIGURE 6

T. pallidum ssp. *Pertenue* (CDC-2) nucleotide sequence

ATGTTTGTGC	GCAGTGACAT	GTTCCTCCAAA	AACACTGCTG	TTGAAATTAG
CAACTTAGAA	AAGAATGCCA	AGGCTCAGGC	AGTGTTATT	GGGCACGCAG
GGATCCCCGG	TCTTCTAGTT	AGCCTTGAC	CCGCTGCTGC	AGCACAGCTT
GGGATTGGCG	TATACCAAGC	TGTGCGTGTA	CGCGTACGTA	CCTTGGGTAC
CGTGCGCGGT	GGGTCTCAAA	CAAGTCAGGA	CGGACTGTCC	CTTGCACTCT
TGCCGTCCCG	TGTGCCTGCG	CGCCCCGCGC	AGCGTGATCC	TCTGTCATCC
CCGCCGGCAG	GTCACACTGT	ACCGGAATAT	CGCGATACGG	TTATTTCGA
TGACCCGCGT	TTGGTTTCCC	CTTTGTCTCG	TGAGGTGGAG	GACGTGCCGA
AGGTAGTGGA	GCCGGCCTCT	GAGCGTGAGG	GAGGGGAGCG	TGAGGTGGAG
GACGTGCCGA	AGGTAGTGGA	GCCGGCCTCT	GAGCGTGAGG	GAGGGGAGCG
TGAGGTGGAG	GACGTGCCGA	AGGTAGTGGA	GCCGGCCTCT	GAGCGTGAGG
GAGGGGAGCG	TGAGGTGGAG	GACGTGCCGA	AGGTAGTGGA	GCCGGCCTCT
GAGCGTGAGG	GAGGGGAGCG	TGAGGTGGAG	TCTCAGCATA	CGAAGCAGCC
ATCCCACTCG	GTTTCCAACT	CAGCTCCCAA	TCAGTTTCCG	AAACCTTGA

FIGURE 7

T. pallidum ssp. *Pertenue* (CDC-2) arp protein sequence

MFVRSDFPK NTAVEISNLE KNAKAQAVVI GHAGIPGLLV SLAPAAAQQL
GIGVYQAVRV RVRTLGTVRG GSQTSQDGLS LASLPSRVPA RPAQRDPLSS
PPAGHTVPEY RDTVIFDDPR LVSPLSR

EVE DVPKVVVEPAS EREGGER
EVE DVPKVVVEPAS EREGGER
EVE DVPKVVVEPAS EREGGER
EVE DVPKVVVEPAS EREGGER

EVA SQHTKQPSHS VSNSAPNQFR KP

FIGURE 8

T. pallidum ssp. endemicum (Bosnia) nucleotide sequence

ATGTTTGTC	GCAGTGACAT	GTTCCCCAAA	AACACTGCTG	TTGAAATTAG
CAACTTAGAA	AAGAA TGCCA	AGGCTCAGGC	AGTGTTATT	GGGCACGCAG
GGATCCCCGG	TCTTCTAGTT	AGCCTTGAC	CCGCTGCTGC	AGCACAGCTT
GGGATTGGCG	TATACCAAGC	TGTGCGTGTA	CGCGTACGTA	CCTTGGGTAC
CGTGCGCGGT	GGGTCTCAAA	CAAGTCAGGA	CGGACTGTCC	CTTGCAATCTT
TGCCGTCCCG	TGTGCTGCG	CGCCCCGCGC	AGCGTGATCC	TCTGTCAATCC
CCGCCCGGCAG	GTCACACTGT	ACCGGAATAT	CGCGATACGG	TTATTTTGA
TGACCCCGCGT	TTGGTTTCCC	CTTTGTCTCG	TGAGGTGGAG	GACGTGCCGA
AGGTAGTGGA	CCCGGCCTCT	GAGCGTGAGG	GAGGGGAGCG	TGAGGTGGAG
GACGTGCCGA	AGGTAGTGGA	GCCGGCCTCT	GAGCGTGAGG	GAGGGGAGCG
TGAGGTGGAG	GACGTGCCGA	AGGTAGTGGA	GCCGGCCTCT	GAGCGTGAGG
GAGGGGAGCG	TGAGGTGGAG	GACGTGCCGA	AGGTAGTGGA	GCCGGCCTCT
GAGCGTGAGG	GAGGGGAGCG	TGAGGTGGAG	GACGTGCCGA	AGGTAGTGGA
GCCGGCCTCT	GAGCGTGAGG	GAGGGGAGCG	TGAGGTGGAG	GACGTGCCGA
AGGTAGTGGA	GCCGGCCTCT	GAGCGTGAGG	GAGGGGAGCG	TGAGGTGGAG
GACGTGCCGA	AGGTAGTGGA	GCCGGCCTCT	GAGCGTGAGG	GAGGGGAGCG
TGAGGTGGAG	GACGTGCCGA	AGGTAGTGGA	GCCGGCCTCT	GAGCGTGAGG
GAGGGGAGCG	TGAGGTGGCT	TCTCAGCATA	CGAAGCAGCC	ATCCCCACTCG
GTTTCCAAC	CAGCTCCCCAA	TCAGTTTCGG	AAACCTTGA	

FIGURE 9

T. pallidum ssp. *endemicum* (Bosnia) arp protein sequence

MFVRS DMFPK NTA VEISNLE KNAKAQAVVI GHAGIPGLLV SLAPAAAQQL
GIGVYQAVRV RVRTLTGTVRG GSQTSQDGLS LASLPSRVPA RPAQRDPLSS
PPAGHTVPEY RDTVIFDDPR LVSPLSR

EVE DVPKVVVEPAS EREGGER
EVE DVPKVVVEPAS EREGGER
EVE DVPKVVVEPAS EREGGER
EVE DVPKVVVEPAS EREGGER
EVE DVPKVVVEPAS EREGGER
EVE DVPKVVVEPAS EREGGER
EVE DVPKVVVEPAS EREGGER
EVE DVPKVVVEPAS EREGGER

EVA SQHTKQPSHS VSNSAPNQFR KP

FIGURE 10

arp #1	
SEQ ID NO: 7	LVSPLEVEDAPKVVEPAS-
arp #2	
SEQ ID NO: 8	-SR-EVEDAPKVVEPASEREGG-
arp #3	
SEQ ID NO: 9	-PKVVEPASEREGGEREVEDA-
TP-arp #4	
SEQ ID NO: 10	PKNTAVEISNLEKNAKAQAVV
TP-arp #5	
SEQ ID NO: 11	GHAGIPGLLVSLAPAAAAQLGIGVY
TP-arp #6	
SEQ ID NO: 12	VPA RPAQRDPLSSPPAGHTVPEY RD
TP-arp #7	
SEQ ID NO: 13	VVEPASEREGGEREVEDPKV
TP-arp #8	
SEQ ID NO: 14	VVEPASGHEGGEREVA SQHTKQPSHS
TP-arp #9	
SEQ ID NO: 15	EVEDVPKVVEPASEREGGER
TP-arp #10	
SEQ ID NO: 16	EVENVPKVVEPASEREGGER
TP-arp #11	
SEQ ID NO: 17	EVEDAPKVVEPASEREGGER
TP-arp #12	
SEQ ID NO: 18	EVEDVPGVVEPASGHEGGER

FIGURE 11

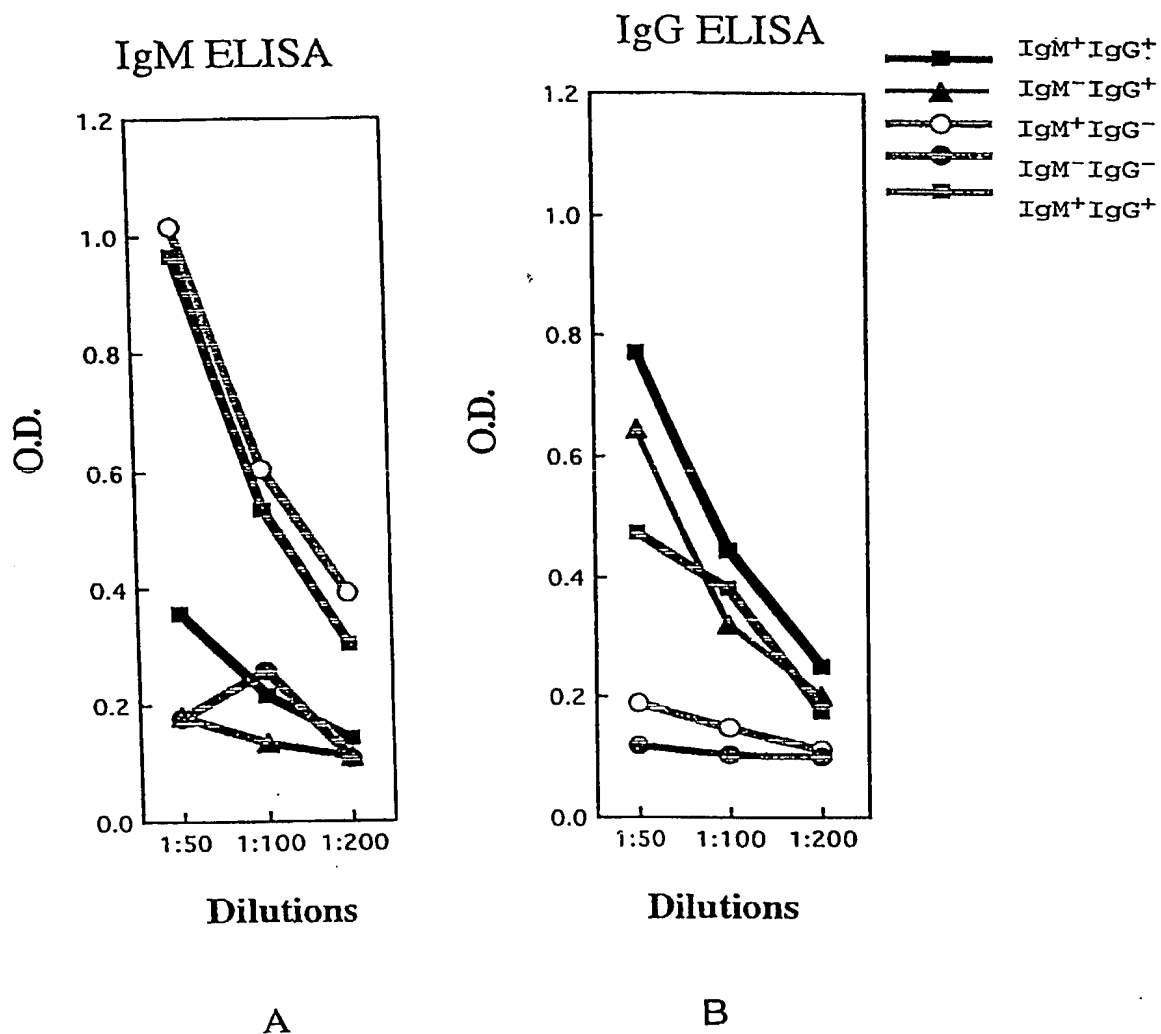


FIGURE 12

Flowcytometry analysis of arp 9

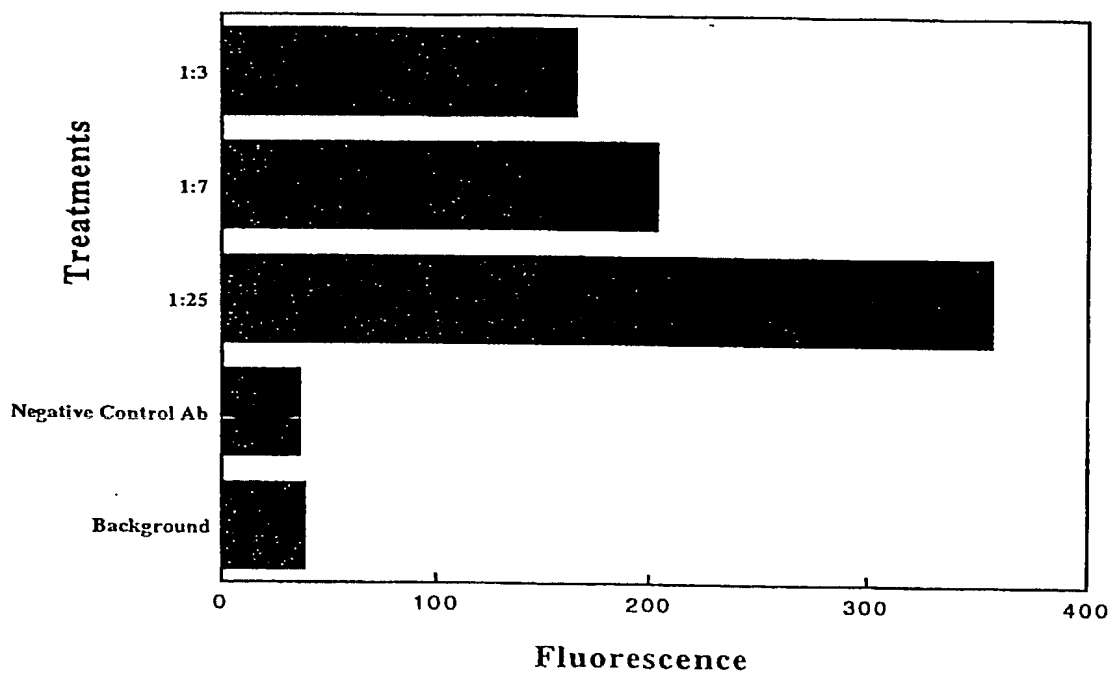


FIGURE 13

FIG. 14

T. pallidum subspecies. *pallidum*, Nichols strain

MFVRS DMFPK NTAVEISNLE KNAKAQAVVI GHAGIPGLLV SLAPAAAAQL
GIGVYQAVRV RVRTLGTVRG GSQTSQDGLS LASLPSRVPA RPAQRDPLSS
PPAGHTVPEY RDTVIFDDPR LVSPLS

REVEDAPKVVEPASEREGGE
REVEDAPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDAPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDAPKVVEPASEREGGE
REVEDAPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPGVVEPASGHEGGE
REVEDVPGVVEPASGHEGGE

Type I: 1, 2, 4, 7, 8
Type II: 3, 5, 6, 9, 10, 11, 12
Type III: 13, 14

REVA SQHTKQPSHS
VSNSAPNQFRNPEGELPFTLPDLSESEIVVPEEQKGRAHP
QVIPEGAPRG LQPGEYYVQI AVFHDAIQVQ SIVHRYGVEYPIAVEQDIHE
GKVRFTVCVG PVQKDERGAV
LENFQRFGFK DAFLKKAR

FIG. 15

T. pallidum subspecies *pertenue*, CDC-2 strain

MFVRS DMFPK NTAVEISNLE KNAKAQAVVI GHAGIPGLLV SLAPAAAAQL
GIGVYQAVRV RVRTLGTVRG GSQTSQDGLS LASLPSRVPA RPAQRDPLSS
PPAGHTVPEY RDTVIFDDPR LVSPLS

REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE

REVA SQHTKQPSHS VSNSAPNQFR NPEGELPFTL PDLSESEIVV
PEEQKGRAHP QVIPEGAPRG LQPGEYYVQI AVFHDAIQVQ SIVHRYGVEY
PIAVEQDIHE GKVRFTVCVG PVQKDERGAV LENFQRFQFK DAFLKKAR

FIG. 16

T. pallidum subspecies *endemicum*, Bosnia strain

MFVRS DMFPK NTAVEISNLE KNAKAQAVVI GHAGIPGLLV SLAPAAAAQL
GIGVYQAVRV RVRTLGTVRG GSQTSQDGLS LASLPSRVPA RPAQRDPLSS
PPAGHTVPEY RDTVIFDDPR LVSPLS

REVEDVPKVV EPASEREGGE
REVEDVPKVV EPASEREGGE
REVEDVPKVV EPASEREGGE
REVEDVPKVV EPASEREGGE
REVEDVPKVV EPASEREGGE
REVEDVPKVV EPASEREGGE
REVEDVPKVV EPASEREGGE
REVEDVPKVV EPASEREGGE

REVA SQHTKQPSHSVSNSAPNQFR NPEGELPFTL PDLSESEIVV
PEEQKGRAHP
QVIPEGAPRGLQPGEYYVQI AVFHDAIQVQ SIVHRYGVEY PIAVEQDIHE
GKVRFTVCVGPVQKDERGAV LENFQRFQFK DAFLKKAR

FIG. 17

T. pallidum subspecies. *pertenue*, CDC-1 strain

MFVRSDMFPK NTAVEISNLE KNAKAQAVVI GHAGIPGLLV SLAPAAAAQL
GIGVYQAVRV RVRTLGTVRG GSQTSQDGLS LASLPSRVPA RPAQRDPLSS
PPAGHTVPEY RDTVIFDDPR LVSPLSREGGE

REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE

REVASQHTK QPSHSVSNSA PNQFRNPEGE LPFTLPDLSE SEIVVP EEQK
GRAHPQVIPE GAPRGLQPG E YYVQIAVFHD AIQVQSIVHR YGVEYPIAVE
QDIHEGKVRF TVCVGPVQKD ERGAVLENFQ RFGFKDAFLK KAR